Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them	)	PR Docket No. 92-235
	)	
and	)	
	)	
Examination of Exclusivity and Frequency Assignment Policies of The Private Land mobile Radio Services	)	

To: The Commission

COMMENTS ON MOTOROLA PETITION FOR CLARIFICATION

BY SEA INC.

May 2, 1997

SUMMARY

SEA Inc. ("SEA") hereby submits its comments regarding Motorola's Petition for Clarification[1/] in this proceeding. SEA asks the Commission to consider carefully the issues discussed.

In its Petition for Clarification, Motorola sought clarification of the Commission's rules regarding the deployment of unauthorized channel-spaced equipment inside the bandwidth previously used by 25 kHz equipment. Specifically, Motorola sought a ruling which would permit the assignment of 12.5 kHz channels on 6.25 kHz offsets from current 25 kHz assignments. SEA does not agree that the kind of conversion suggested by Motorola was ever intended as a refarming transition path. SEA believes Motorola's request may be rooted in a misinterpretation of the rules. Finally, it is SEA's belief that, were the Commission to adopt Motorola's suggestion, added coordination complexity and potential adjacent channel interference would result. For these reasons SEA opposes Motorola's petition.

SEA discusses herein the issues surrounding the conversion of wideband 25 kHz assignments to multi-channel narrowband or equivalent efficiency operation, and requests the Commission to clarify the rules in this area. Of particular concern are the questions about (1) the amount of authorized bandwidth a current licensee is entitled to use; and (2) the licensing process of conversion.

Prior to Motorola's Petition, SEA had expected the Commission to address the issue of converting from current wideband operation to multiple-channel narrowband operation (or wideband spectrum-efficient operation) in a subsequent ruling on exclusivity and incentives[2/]. But that ruling has yet to take place. Rather than wait for that ruling, SEA believes it is timely and appropriate to address this important issue in the context of Motorola's Petition.

1/ Petition for Clarification, Motorola, Inc., February 14, 1997, relative to Memorandum of Opinion and Order, PR Docket No. 92-235, adopted December 23, 1996 [MO&O].

2/ First Report and Order and Further Notice of Proposed Rule Making, Docket No. 92-235, 10 FCC Rcd 10076 (1995).

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To: The Commission

COMMENTS ON MOTOROLA PETITION FOR CLARIFICATION

SEA Inc. ("SEA") hereby submits its comments regarding Motorola's Petition for Clarification filed in this proceeding on February 14, 1997, with respect to the Memorandum Opinion and Order, on reconsideration, adopted December 23, 1996 ("MO&O"), as follows:

I. SEA requests clarification of existing licensee's bandwidth entitlements

SEA is interested in the issue of deploying narrowband emissions where 25 kHz analog FM once operated. First, however, an examination of what constitutes the bandwidth entitlement of an existing licensee is required.

As noted by Motorola, the Commission stated in the MO&O[1/] that "...some

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1/ Memorandum of Opinion and Order, at paragraph 11.

users may want to implement 5 kHz (-spaced) technology within *their existing 25 kHz bandwidth...*", (italics added) and that the Commission will permit this. SEA believes the Commission erred in equating 25 kHz channel bandwidth with 25 kHz authorized bandwidth. In support of this belief, SEA makes the following observations:

a) SEA did not conclude from the above-quoted statement, nor from the text of the refarming rules, that the Commission has suggested that licensees authorized to operate on 25 kHz-spaced channels are entitled to use the entire 25 kHz of spectrum surrounding the licensed channel center. Such a conclusions would clearly conflict with the plan to convert low-power offsets to high power primary operation.

b) There does not currently exist an emission mask for such an authorization. SEA's interpretation of the rules is that 6.25 kHz channel assignments could be "stacked" and that the combination of contiguous emission masks would establish the total assigned bandwidth. Only odd numbers of 6.25 kHz channels result in symmetry about the old channel center, however, resulting in 1 and 3 stacked channel combinations, which utilize 6 kHz and 18.5 kHz authorized bandwidths, respectively.

c) There is no rule part that specifies how such a multiple channel implementation can take place. The MO&O (at paragraph 40) describes how a licensee need only notify the Commission to convert to a (single) narrower channel, but there is no specific discussion which addresses the logistics of conversion to multiple emission operation.

SEA notes that the above observations apply to the implementation of wide-bandwidth technologies that meet the efficiency standard, as well.

It is SEA's interpretation of the rules that licensees of 25 kHz-spaced channels are not entitled to use the entire 25 kHz of channel bandwidth. The emission mask for existing licensees' current equipment specifies that their emissions must be attenuated greater than 25 dB at a 10 kHz offset (90.210 emission mask B[2/]). Therefore, a 20 kHz authorized bandwidth is their licensed "entitlement". It is apparent that such licensees may convert their assignments to up to three stacked 6.25 kHz channels (2*6.25+2*3=18.5 kHz), if they choose to convert to narrowband or equivalent. Note that, were a licensee entitled to use the entire 25 kHz bandwidth, the licensing of the adjacent 12.5 kHz "high power" offset channels would be hindered, if not precluded entirely.

II. Motorola's Petition for Clarification

If SEA's foregoing interpretation of the rules is correct, then Motorola's request that 12.5 kHz technology be permitted to occupy channel centers at 6.25 kHz offsets from current 25 kHz-spaced assignments should be denied. Specifically, Motorola has requested relief from the requirement described in the Report and Order as follows:

> "...only equipment designed to operate on a channel bandwidth of 12.5 kHz or less may be used on any of the channels 12.5 kHz removed from any existing channel and only equipment designed to operate with a channel bandwidth of 6.25 kHz or less may be used on any of the channels 6.25 kHz removed from any existing channel".[3/]

2/ Note that, as drafted in the Report, ¶90.210 has two subparagraphs labelled "(a)".

3/ See Report and Order at paragraph 27.

Motorola's request for relief from this requirement should be denied for the following reasons:

1. Motorola's request would create disharmony with the Commission's band plan. It would be up to the frequency coordinators to deal with the discordant channel plans (the Commission's and Motorola's). Such an approach would not be congruous with the concept of converting the former offset channels to high power operation because it would increase interference potential[4/]. Note that a 12.5 kHz channel assigned per Motorola's suggestion would be placed only 6.25 kHz from a former "offset" channel center.

Figure 1 in Appendix A attached hereto graphically superimposes the relative emission masks for: (1) a 25 kHz channel; (2) an on-channel 12.5 kHz channel; and (3) two adjacent high power offset channels. This represents the channel plan adopted by the Commission and illustrates how an on-channel conversion from 25 kHz to 12.5 kHz operation can co-exist with new high power offset operation. Figure 2 illustrates the channel configuration suggested by Motorola. It is noteworthy how, in Figure 2, the 12.5 kHz channels placed at 6.25 kHz offsets overlap with the new high power offset channels. Importantly, these new

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4/ Indeed, the rule part that Motorola seeks relief from was developed to avoid interference. See Report and Order at para. 27. The Commission stated, "Since we are allowing the use of wideband equipment, we are also taking steps to reduce the instances of detrimental adjacent channel interference and generally make a transition to narrowband technology easier on PLMR users. To this end, we will place some restrictions on the maximum bandwidth that can be used on certain channels in the refarming bands."

high power offsets could not be used in the same geographic area if the Motorola approach is adopted.

2. As discussed above, current 25 kHz-spaced channel assignments are not entitled to use the entire spectrum that would be occupied by two 12.5 kHz assignments. A 25 kHz-spaced channel is entitled to 20 kHz of authorized bandwidth. The two-12.5 kHz channel implementation suggested by Motorola would require 23.75 kHz of contiguous authorized bandwidth[5/]. Figure 2 in Appendix A illustrates this fact.

3. Motorola's argument that "...the reasons for allowing the deployment of five 5 kHz emitters in an existing 25 kHz bandwidth equally apply to the deployment of two 12.5 kHz transmitters...[6/]" is not valid. First, as discussed supra, there is no such thing as an "existing 25 kHz bandwidth"; some degree of spectrum aggregation must take place before 25 kHz of contiguous authorized bandwidth becomes available for such an implementation to take place[7/]. Second, because 5 kHz transmitters inherently conform to the

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5/ Two 12.5 kHz emissions each having an authorized bandwidth of 2*5.625 = 11.25 kHz (per Section 90.210 Emission Mask D), and which are spaced 12.5 kHz apart, occupy a total authorized bandwidth of 12.5 + 2*5.625 = 23.75 kHz.

6/ See Motorola Petition for Clarification at page 4.

7/ Indeed, the Commission stated in its ruling on this matter, "...(w)e allow the flexibility of *aggregating* up to the equivalent of 4 NB channels provided that spectrum-efficient technology is employed (e.g. 4-TDMA in 25 kHz)." See Report and Order, PR Docket 92-935, at paragraph 7.

efficiency standard established for these services and the 12.5 kHz transmitters presumably[8/] do not, SEA sees no reason that such a rule should "apply equally" to the two cases.

The Motorola 6.25 kHz offset suggestion, if adopted, would allow a current 25 kHz licensee to convert its existing 25 kHz assignment into two 12.5 kHz assignments. SEA does not believe that such operation was ever intended in the refarming rules and it should not be permitted. Preserving the 6.25 kHz offset restriction will ensure that a licensee converting a 25 kHz channel to a 12.5 kHz channel (maintaining the original channel center) will not be interfered with by newly licensed high power 12.5 kHz offset channels. Preserving the 6.25 kHz offset restriction may even create an opportunity for such licensees to obtain one of the 12.5 kHz offsets and thereby double their channels. This approach would also enable the existing channel centers to be maintained, a critical factor to many licensees as noted by the Commission[9/].

8/ Motorola does not mention conformance with the efficiency standard, so SEA presumes that Motorola refers to the use of the permitted "transitional" 12.5 kHz technologies when it discusses 12.5 kHz channels.

9/ See Report and Order at 26. "Channelizing on current channel centers ("on-channel") will allow users to remain on their current licensed frequency throughout a transition to narrowband. Remaining on-channel was seen as critical to existing licensees. As emphasized by existing users, on-channel transition will minimize confusion and provide a simpler migration path."

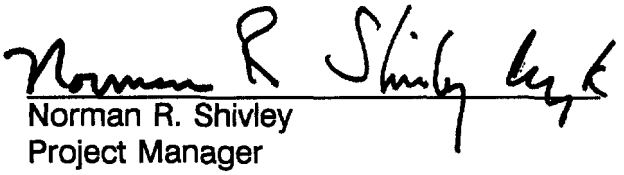
Maintaining the restriction will preserve the order of the channel plan adopted by the Commission, thus ensuring that the significant advantages of the Commission's channel plan are not lost.

III. Conclusion

In conclusion, for the reasons discussed herein, SEA requests that the Commission clarify the authorized bandwidth "entitlement" of existing licensees; establish guidelines for conversion of existing assignments to multiple narrowband emissions; and codify the emission mask limits for aggregated narrowband channel authorizations. Further, SEA requests that the petition by Motorola to permit 12.5 kHz channels to operate on 6.25 kHz offsets from existing channels be denied, and that the current language regarding 6.25 kHz offset assignments be maintained.

Respectfully submitted,

SEA INC.

By: 

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May 2, 1997

Attachments: Appendix A, Fig. 1
Appendix A, Fig. 2

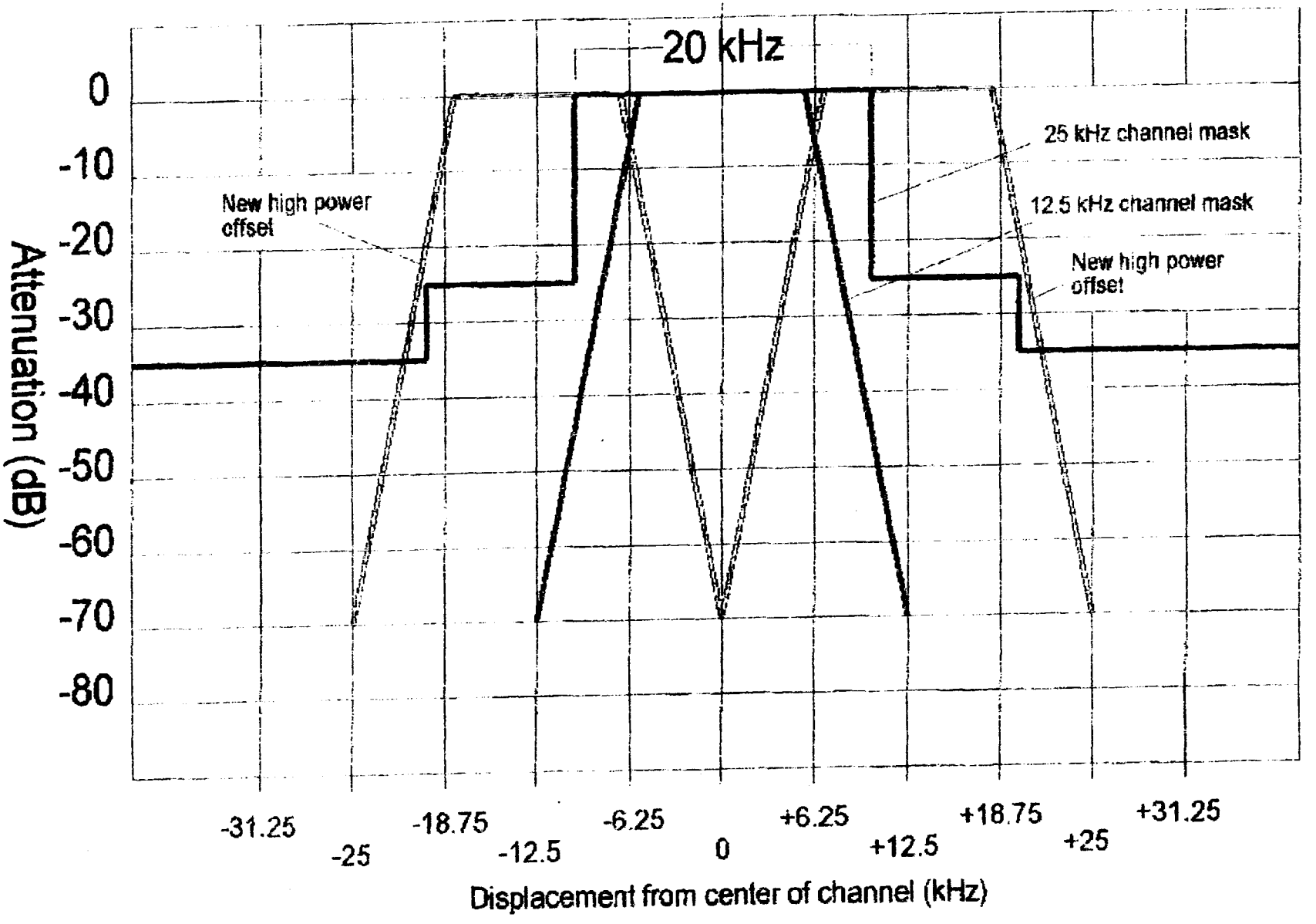

Figure 1

Commission's adopted channel centers for 12.5 kHz authorized channels (proper)

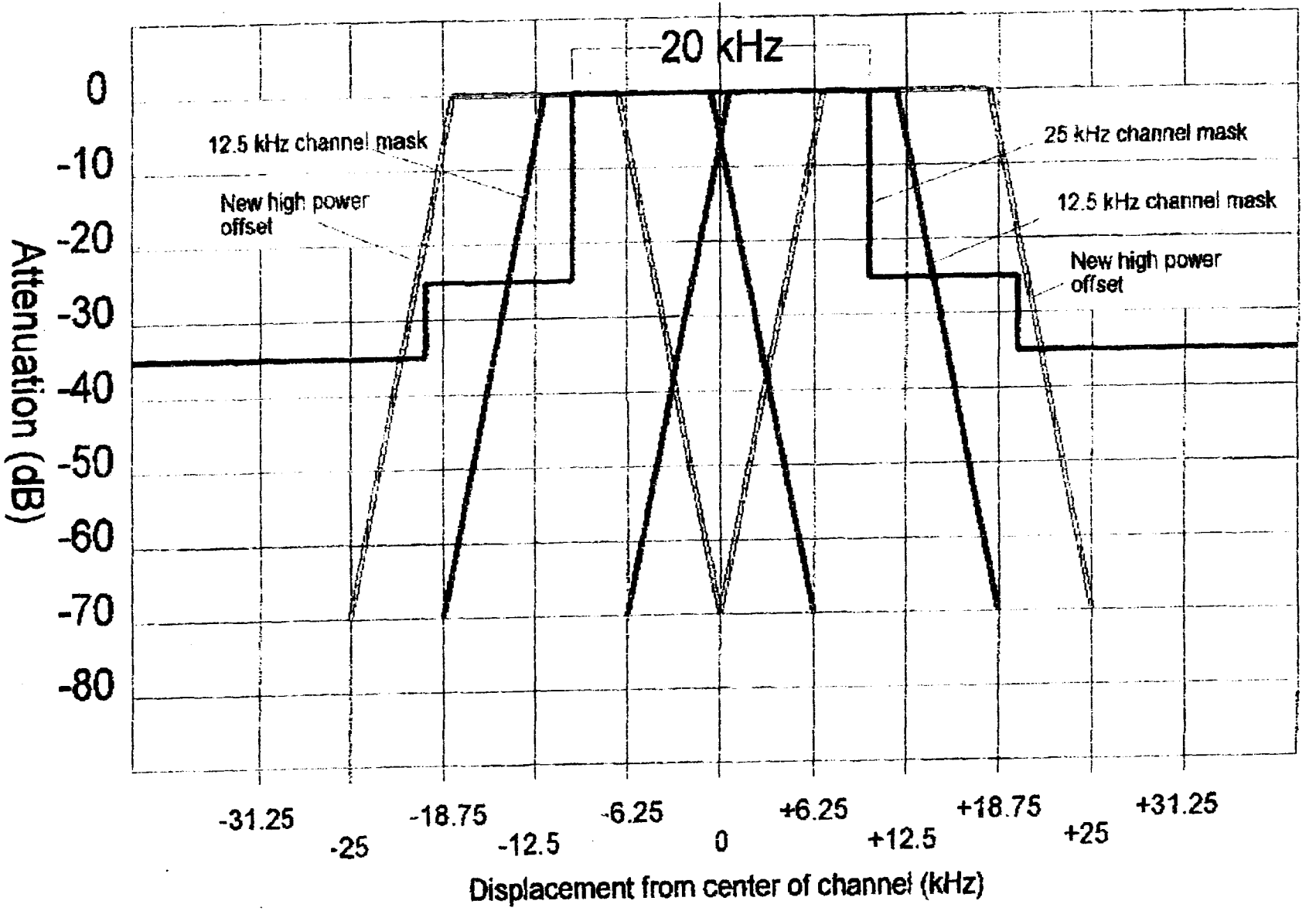

Figure 2

Motorola's requested channel centers for 12.5 kHz authorized channels (improper)

CERTIFICATE OF SERVICE

I, Norman R. Shivley, hereby certify that I have caused a copy of the foregoing "Comments on Motorola Petition for Clarification" to be served this 2nd day of May, 1997, by U.S. first-class mail, postage prepaid, to the following:

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